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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number: 09877.0312-00000

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on _____

Signature _____

Typed or printed
name _____

Application Number

10/500,072

Filing Date

April 15, 2005

First Named Inventor

Mauro Maritano

Art Unit

1782

Examiner

GRAY, Jill M.

Applicant requests review of the twice-rejected in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.

☐ attorney or agent of record

Registration number _____

☒ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 62,827



Signature

Jeremy S. Forest

Typed or printed name

650-849-6655

Telephone Number

June 30, 2010

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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In response to the April 1, 2010, Final Office Action, Applicants request review of the rejection of claims 1-28 for allegedly being obvious under 35 U.S.C. § 103(a) over U.S. 6,577,796¹ and WO 00/21098 (collectively "Anelli") in view of U.S. 5,134,036 ("Uemura") and U.S. 5,187,226 ("Kamachi").² See Final Office Action, pages 3-9.

Claim 1 is drawn to a telecommunication cable with a composition derived from combining (1) a vinyl alcohol/vinyl acetate (VA/VAc) copolymer having a saponification degree from about 60% to about 95%, (2) a plasticizer, and (3) a hydrolysis stabilizer compound that comprises a chelant group comprising two hydrogen atoms bonded to two respective heteroatoms selected from N, O, S where the two hydrogen atoms have a distance between each other of 4.2×10^{-10} m to 5.8×10^{-10} m. The degree of saponification refers to the degree that acetate groups have been converted (i.e., hydrolyzed/ saponified) to alcohol groups. Application, 1:18-28. Hydrolysis stabilizers are believed to hinder the conversion of acetate groups to alcohol groups. *Id.* at 2:23-28.

While the Office alleges that Anelli discloses a VA/VAc copolymer to which can be added "conventional additives such as stabilizers and plasticizers. . .," it concedes that Anelli is "silent as to the specific stabilizer" added to the VA/VAc copolymer. Final Office Action at 4. In fact, Anelli does not disclose or suggest any specific types of stabilizers, let alone hydrolysis stabilizers or the claimed hydrolysis stabilizers. Anelli,

¹ As explained on April 24, 2008, whereas this application has an effective U.S. filing date of Jan. 8, 2002, U.S. 6,577,796 issued June 10, 2003 and has an effective U.S. filing date of Oct. 6, 1999. Thus, it qualifies only as § 102(e) prior art and is unavailable for an obviousness rejection pursuant to 35 U.S.C. § 103(c) due to common ownership.

² Applicants acknowledge the Office's Section 112 rejections of claims 15, 16, and 28. Applicants elect, however, to direct their Pre-Appeal Brief solely to the Office's Section 103 rejection. Applicants will readily address the Office's Section 112 rejections at the appropriate time following the conclusion of this proceeding.

18:7-8. The Office applies Uemura and Kamachi in an attempt to remedy this deficiency. According to the Office, both Uemura and Kamachi disclose certain vinyl alcohol copolymers that are produced by the saponification (*i.e.*, hydrolysis) of vinyl esters in the presence of an antioxidant such as "IRGANOX 1098." Final Office Action at 4. In this respect, Uemura and Kamachi have nearly identical disclosures. Namely, Uemura and Kamachi disclose that antioxidants, such as IRGANOX 1010 and 1098, are used to scavenge oxygen so that ethylene and a vinyl ester can polymerize and the ester/acetate groups can be saponified/hydrolyzed into a VA/VAc copolymer. Uemura, 2:27-32, 3:43-4:13; Kamachi, 2:36-40, 4:39-47, 6:34 - 7:25.

The Proposed Combination Does Not Teach or Suggest All Claim Elements

First, notably absent from the Office's analysis is the fact that while Anelli may teach to add a stabilizer to a saponified VA/VAc copolymer, Uemura and Kamachi do not teach or suggest to a person of ordinary skill in the art that their antioxidants can act as "hydrolysis stabilizers" to prevent further saponification of previously-manufactured VA/VAc copolymers. To the contrary, Uemura and Kamachi actually suggest that the antioxidants are expressly selected so as not to hinder complete polymerization and saponification/hydrolysis. Uemura, 3:55-55; Kamachi, 6:60-64. In other words, while the claims recite the use of a compound that will inhibit hydrolysis of the VA/VAc copolymer (*i.e.*, the hydrolysis stabilizer), Uemura and Kamachi disclose a compound that acts as an antioxidant so as to permit hydrolysis of the VA/VAc copolymer. Thus, even assuming a motivation to combine the references of record exists (and Applicants do not concede it does), a skilled artisan would only look to utilize the antioxidants of Uemura and Kamachi for their function during the production of a copolymer to effect hydrolysis.

While the un-named stabilizers of Anelli serve their function after the VA/AVc copolymer has been manufactured and the antioxidants of Uemura and Kamachi serve their function during the production of a VA/AVc copolymer, the Office maintains its rejection of the pending claims by asserting that a skilled artisan would have been motivated to combine the antioxidant of Uemura and Kamachi with the compositions of Anelli based on an alleged "necessity of maintaining antioxidant functionality." Final Office Action at 7. From that, the Office concludes "implicit in the prior art teachings is the desirability for the antioxidant properties of the antioxidant, whereby said properties are incorporated in the resultant VA/AVc copolymer." *Id.* at 6. (emphasis added). This argument fails for lack of evidence or analysis.

The Office's argument fails on its face because the disclosed properties of the antioxidants (permitting hydrolysis) is contrary to the properties desired in the claimed composition (preventing hydrolysis) or supposedly in Anelli (stability).

The Office's argument also fails because there is no evidence in the cited art that the antioxidants of Uemura/Kamchi survive the polymerization/saponification process. In fact, since the antioxidants are disclosed as oxygen scavengers (presumably chelating with oxygen and, thus, becoming inactive), one of ordinary skill in the art would expect that the antioxidants to be depleted by the process. Uemura even describes how the antioxidant may "react" with the basic substances it uses. 4:36-37.

The presence of remaining antioxidant at the levels required by the claims (0.75mm/100 g. copolymer) is speculative at best and, thus, cannot be the basis for inherent disclosure. M.P.E.P. § 2112 ("The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic."). Indeed, the M.P.E.P. advises that "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to

reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Id.* (emphasis in original)).

Second, contrary to the claims, there is no teaching of adding the hydrolysis stabilizer to a VA/VAc copolymer. Assuming *arguendo* that that (1) there a motivation to combine the references of record and (2) that the antioxidants remain mixed with Uemura/ Kamachi's copolymer (and Applicants do not concede they do), that combination is not a teaching of combining the antioxidant to a VA/VAc copolymer. Rather, the antioxidant is present before even the polymerization. *See e.g.*, examples of Uemura and Kamachi.

Third, even if the Office is correct that excess antioxidant remains after producing the saponified VA/VAc, as per Uemura and Kamachi, and acts as a hydrolysis stabilizer, there is no basis to suggest it is present in an amount in the final product to meet the "at least **0.75 mmoles** per 100 g of copolymer" limitation. Uemura is silent with respect to the amount of antioxidant that should be used to permit hydrolysis (let alone the amount that may be present in the final product). Kamachi discloses the use of 0.01 g of Irganox® 1010 for 2 g of copolymer, corresponding to about **0.008 mmoles** of antioxidant per 100 g of copolymer. *See* Example 8. In fact, this constitutes the high end of what Applicants believe is commonly used in the art. *See* application, 2:21-22 (0.01/2.01=0. 5%).

The Stabilizers of the Pending Claims Exhibit Unexpectedly Superior Properties

"Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a *prima facie* case of obviousness." M.P.E.P. § 716.02(a). Here, both Uemura and Kamachi teach one skilled in the art that hindered phenol antioxidants, such as Irganox® 1098, Irganox® 245, Irganox® 249, and Irganox® 1010, are interchangeable, stating that "[t]he antioxidant is not particularly

limited as long as it does not act adversely to the saponification reaction . . . and is representatively exemplified by, for example, hindered phenol antioxidants.” Uemura, 3:50–4:13 (emphasis added); *see also*, Kamachi, 6:60–7:24.

Contrary to Uemura’s and Kamachi’s interchangeability of antioxidants teaching, Applicants discovered that a very narrow subgenus of compounds exhibit unexpectedly superior properties as hydrolysis stabilizers for VA/VAc copolymers; those with **“two hydrogen atoms bonded to two respective heteroatoms ... said two hydrogen atoms having a distance between each other of from 4.2×10^{-10} m to 5.8×10^{-10} m.”** Table 2 of the present application shows that a hydrolysis stabilizer according to the invention (composition 1, containing Irganox® 1098) exhibits a mere 6.3% variation of saponification number versus hydrolysis stabilizers outside of the claimed range (Compositions 3-5 with Irganox® 245, Irganox® 249, and Irganox® 1010), which exhibited variations of 12.3-14.8%; i.e., 100% worse. Application, pp. 18-20. The distance between the hydrogen atoms in Irganox® 1098 is understood to be 5.0×10^{-10} m, versus a range of 8.7 to 10.5×10^{-10} m for Irganox® 1010. While Uemura’s and Kamachi’s Irganox® 1010 and Irganox® 1098 limit hydrolysis, Applicants believe Irganox® 1098’s surprising superiority is due to the distance between hydrogen atoms; “effectively interacting with the polymeric chain of the VA-VAc copolymer in order to limit the hydrolysis of the residual acetate groups.” *See id.* at 10:17-20, 11:17-26. This disclosure is commensurate in scope with the very narrow disclosure of hydrolysis stabilizers: those with very specific chemical features, very specific molecular morphology, and in a very specific amount.